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DEPARTMENT OF NATURAL RESOURCES

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Division of Oil, Gas and Mining
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Minerals Inspection Report

Report Date: 7/14/2014

Reviewed 

Mine Name: Antelope Quarry	Permit Number: S/039/0018	Mine Status: Reclaimed
Operator Name: Bown Stone Products Inc.	Inspection Date: 06/17/2014	Permit Fees: No Fee Req.
Inspector(s): Peter Brinton	Inspection Time: 1:30pm - 2:15pm	Bond Amount: \$18,600
Attendee(s): none	Weather: overcast, warm	Bond Escalation: n/a
Inspection Purpose: Operator requested bond release		Prior Inspection: 04/03/2014

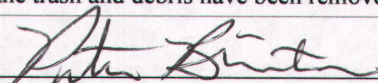
Conclusions and Recommendations

Grading work is acceptable, and a release of reclamation surety associated with earthwork is appropriate. Part of the reclamation surety should be retained to cover revegetation.

Elements of Inspection	Evaluated & Commented	Enforcement
1. <i>Permits, Revisions, Transfer, Bonds</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Based on regrading work, it is recommended that the bond be reduced, and the permit status changed to Reclaimed.		
2. <i>Public Safety (shafts, adits, trash, signs, highwalls)</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Outslopes in both quarry areas are steep and still somewhat loose, but no unreasonable conditions affecting public safety exist. Adjacent natural slopes are steep, with relatively minor natural rockfall ongoing.		
3. <i>Protection of Drainages/Erosion Control</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fallen boulders and dump slopes extend off the ridge and partly down the hill. Given the nature of the pre-mining and adjacent natural slopes (steep, with natural - though fewer - boulder falls) and the lack of any significant upslope area to generate flows (since the crest of the slope is the natural high point), no significant erosion concerns are present. The culvert, and the fill in the dry channel at the beginning of the access road have been removed, and the natural channel re-established		
4. <i>Deleterious Material</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
None.		
5. <i>Roads (maintenance, surfacing, dust control, safety)</i>	<input type="checkbox"/>	<input type="checkbox"/>
6. <i>Reclamation</i>	<input type="checkbox"/>	<input type="checkbox"/>
7. <i>Backfilling/Grading (trenches, pits, roads, highwalls, shafts)</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Quarry areas were acceptably backfilled, and the operators did a good job of recontouring as a whole, given site conditions. Large blocks of stone remain exposed or on top of the natural ground surface in some parts, and a depression in the northeast quarry was left which could have been more completely filled with nearby graded rock piles that rise above the natural surface. However, the natural surface of the site would have had significant amounts of exposed stone prior to mining, and the post-mining land use of the graded site will be similar to that of the pre-mining land use, and, in this case, it was decided that no additional work is needed. Roads cuts have been graded, and the roads on the top of the hill between quarries have been roughened.		
8. <i>Soils</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Along the hill crest and adjacent to the quarry, soils are thin to non-existent. Where limestone is exposed at the surface, sagebrush and some other plants grow only in cracks in the limestone. As part of reclamation in the parts of the northwest disturbance, soils that reportedly were naturally deposited in a gap between bedrock and the crest were excavated and spread to help cover the graded rock. In some areas, significant broken rock remains uncovered, and revegetation may be more difficult. The post-mining land use should not be significantly different from that of adjacent undisturbed areas, but it is possible additional revegetation work and time may be needed before beneficial species will be established.		
9. <i>Revegetation</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
No species recommended for seeding were observed. Predominantly weedy species are growing on graded areas, included halogetan, Russian thistle, and cheatgrass. The undisturbed areas surrounding the disturbances is a mix of both weedy species and beneficial species, with large weedy areas located to the north of the hill.		

10.	Other	<input checked="checked" type="checkbox"/>	<input type="checkbox"/>
Practically all of the trash and debris have been removed.			

Inspector's Signature: _____



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File: /nrwogmfs1/OGM/GROUPS/MINERALS/WP/M039-Sanpete/S0390018-Antelope/inspections/INSP-06172014.pdf



Northeast quarry, looking south from the nearby community pit. Note the rock piles and fallen rock.



Re-established drainage (left) at the site entrance, and the graded, weedy access road on the right.



Section of contoured access road with first year's weed growth.



Graded access road with cheatgrass and other weeds across the hilltop between the southwest and northeast disturbances.



Regraded disturbance along the southwest crest of the hill, looking northwest. Note the rocky slopes and rock outcrop that would be characteristic of pre-mining conditions. Photo was from the July 3, 2013 inspection. Stitched photo.



Roughened road connecting the small northeast site with the larger. Photo was from the July 3, 2013 inspection.



Conditions adjacent to the northwest end of the northeast disturbance, looking off the crest to the northwest. Note the exposed limestone bed at the surface with no soil.



Rocky graded area looking northwest along the northeast crest of the hill. Note the significant rock with some fines. The depression is to the rear of the stitched photo, and some of the foreground material could have been pushed into the depression more.



Graded area primarily covered with soils and weeds looking southeast along the northeast crest of the hill. Stitched photo.